

"If there was no star eclipsed by the moon at or about 7 P.M. that night, the white spot that was more like one of the mountain-tops tipped with light than a star, may have had some connexion with it.

"Cessnock Park, January 15th, 1855."

Discovery of a New Comet (Comet I. 1855).

By M. Winnecke.

On the morning of the 15th of January, M. Winnecke discovered at Berlin, in the vicinity of γ *Hydræ*, a faint granulous nebula, the estimated position of which was,—

Jan. 14, 18^h 225° 20' -27° 11'

On the next morning it was found to have shifted its place. The following observation of its position was obtained by the discoverer and M. Bruhns:—

	Berlin M.T. h m s	R.A. ° ' "	Decl. ° ' "
Jan. 15	18 4 16.2	226 5 15.4	-27 15 5.3

Apparent place of the star of comparison,—

	R.A. ° ' "	Decl. ° ' "
Argel Z 373, No. 57	226 38 16"	-27 18 42.4

The daily motion is consequently,—

In R.A. about	+ 45'
Dec. —	- 4'

The comet has also been discovered independently by M. Dien, at the Imperial Observatory, Paris.

M. Bruhns has calculated an ephemeris of the comet, extending from Jan. 14 to Feb. 17, printed copies of which have been circulated by M. Peters, the editor of the *Astronomische Nachrichten*.

The weather has hitherto been very unfavourable for observing this comet in England.

On the Orbit of the Binary Star σ *Coronæ Borealis*.

By Eyre B. Powell, Esq.

"Three orbits have been already arrived at for this star, viz. that computed by Sir John Herschel, and the approximately inter-accordant ones of Messrs. Hind and Mädler; it may, therefore, appear, at first sight, a work of supererogation to investigate a fresh set of elements. The startling difference, however, that exists between Sir J. Herschel's orbit and the other two, will,

perhaps, be held to excuse my troubling the Society with the present communication.

"By the graphical method I obtained the following results for the apparent orbit of σ .

$$\begin{aligned} a &= 2''.725 \\ e &= .6479 \\ \text{Minimum distance} &= 1''.27 \\ \text{Position for do.} &= 91^\circ 20' \\ \text{Maximum distance} &= 2''.74 \\ \text{Position for do.} &= 324^\circ 30' \end{aligned}$$

"The apparent ellipse then gave the elements of the real orbit as follow:—

$$\begin{aligned} \tau &= 1829.7 \\ \varpi &= 102^\circ 50' \\ \Omega &= 38 \\ \gamma &= 45.6; \lambda = 96^\circ 53' \\ e &= .3887 \\ n &= + 1^\circ.5, \text{ Period} = 240 \text{ years.} \\ d &= 2''.94 \end{aligned}$$

"I annex two tables, one affording a comparison between the results of computation and those of observation for angles of position, the other effecting the same object for distances.

Comparison of Calculated and Observed Positions.

Date.	θ_c ° ' "	θ_o ° ' "	$\theta_c - \theta_o$ ° ' "	Observers.
1780.6	347 48	347 32	+ 16	H sec. <i>Cycle</i> *
1781.79	348 57	347 32	+ 1 25	H sec. H
1802.74	13 58	11 24	+ 2 34	H
1822.48	66 44	66 24	+ 20	H & S, Σ †
1824.45	75 57	75 10	+ 47	H & S, S‡
1826.77	87 37	89 0	− 1 23	Σ
1830.52	107 3	106 51	+ 12	H, D, Sm §
1831.34	111 9	111 32	− 23	D
1832.459	116 37	115 26	+ 1 11	D, Sm
1833.47	121 20	120 39	+ 41	D, Sm ¶
1835.5	130 11	130 54	− 43	Sm
1839.67	145 27	145 6	+ 21	Sm
1843.35	156 8	155 54	+ 14	Sm
1846.22	163 6	163 45	− 39	J
1853.513	177 7	176 59	+ 8	J & Self **

* I believe the *Cycle* follows the *Philosoph. Trans.* See vol. v. Astron. Soc. *Memoirs*.

† 1821.3 65° 15' H & S; 1822.67 61° 0' Σ ; 1823.47 72° 56' H & S.

‡ 1823.47 72° 56' H & S; 1825.44 77° 31' S.

§ 1830.28 105° 5' H; 1830.52 107° 17' D; 1830.76 107° 36' Sm.

|| 1832.549 115° 57' D; 1832.37 114° 54' Sm.

¶ 1833.36 120° 37' D; 1833.58 120° 42' Sm.

** 1853.142 177° 54' J; 1853.348 175° 12' Self; 1854.048 177° 52' J.

Comparison of Calculated and Observed Distances.

Date.	d_c	d_o	$d_c - d_o$	Observers.	Remarks.
1823.47	1.34	1.45	-.11	H & S	
1826.77	1.28	1.3	-.02	Σ	
1830.52	1.29	1.26	+.03	H, Sm	1830.28, 1".22 H ;
1832.37	1.33	1.4	-.07	Sm	1830.76, 1".3 Sm
1833.47	1.36	1.25	+.11	D, Sm	1833.36, 1".3 D ;
1835.5	1.43	1.4	+.03	Sm	1833.58, 1".2 Sm
1839.67	1.62	1.6	+.02	Sm	
1843.35	1.7975	1.8	-.0025	Sm	
1846.22	1.94	1.87	+.07	J	
1853.7	2.25	2.21	+.04	J	

H stands for Sir W. Herschel; H for Sir J. Herschel; Σ for Prof. Struve; S for Sir J. South; Sm for Admiral Smyth; D for the Rev. Mr. Dawes; J for Captain Jacob.

"It is not necessary to dwell upon the foregoing; but I would remark that my orbit approaches much nearer to the early one of Sir J. Herschel than it does to those computed by Messrs. Mädler and Hind at more recent dates. So far as I am able to judge, there does not appear to be ground for believing the period to extend over six or seven hundred years.

"I did not think it worth while to form equations of condition with the view of correcting the elements, as the orbit represents the observations, more especially those of distance, with very considerable accuracy: indeed in no other case have I arrived at equally respectable results, I will not say after the first, but even after the third or fourth approximation.

"Madras, Nov. 20th, 1854."

Observations of the Zodiacal Light in 1854.

By T. W. Burr, Esq.

In continuation of my previous notice of the zodiacal light, I have to report that in the spring of 1854 I observed it on the evenings of February 16th, 18th, 23d, 25th, and 26th; March 17th, 21st, 23d, 27th, and 30th; and April 17th. The first and two last appearances were mere glimpses, but on February 18th the view was exceedingly good; and those of 21st March from 8^h 10^m to 9^h Greenwich mean time, and 23d March from 8^h to 8^h 30^m, were as fine as possible in this latitude and locality.

It is unnecessary to describe its course and appearance with any great minuteness, as there is always a difficulty in ascertaining its exact extent. Generally it very much resembled the description I gave of it in the preceding year, extending in the early